

**WHAT IS CLAIMED IS:**

1. A pesticidal composition comprising, in admixture with an acceptable carrier, at least one plant essential oil compound or derivative thereof.

2. The pesticidal composition of claim 1, wherein the plant essential oil compound is selected from the group consisting of aldehyde C16 (pure),  $\alpha$ -terpineol, amyl cinnamic aldehyde, amyl salicylate, anisic aldehyde, benzyl alcohol, benzyl acetate, cinnamaldehyde, cinnamic alcohol, carvacrol, carveol, citral, citronellal, citronellol, dimethyl salicylate, eucalyptol (cineole) eugenol, iso-eugenol, galaxolide, geraniol, guaiacol, ionone, d-limonene, menthol, methyl anthranilate, methyl ionone, methyl salicylate, alpha-phellandrene, pennyroyal oil perillaldehyde, 1- or 2-phenyl ethyl alcohol, 1- or 2-phenyl ethyl propionate, piperonal, piperonyl acetate, piperonyl alcohol, D-pulegone, terpinen-4-ol, terpinyl acetate, 4-tert butylcyclohexyl acetate, thyme oil (white and red), thymol, trans-anethole, vanillin, and ethyl vanillin.

3. The pesticidal composition of claim 1, further comprising a signal transduction modulator.

4. The pesticidal composition of claim 1, further comprising a surface-active agent.

5. A pesticidal composition comprising, in admixture with an acceptable carrier, at least at least one plant essential oil compound and at least one pesticidal agent selected from a member of the group consisting of plant essential oil compound, natural insecticide compound, chlorinated hydrocarbon, synthetic pyrethroid, organo phosphate, carbamate, macrolide, insect growth regulator, neonicitinoid, organo-tin, and other conventional classes of pesticides such as propargite.

6. The pesticidal composition of claim 5, wherein the pesticidal agent is selected from a member of the group consisting of allethrin, azadirachtin (neem), carbaryl, chlorpyrifos, DDT, fenvalerate, deltamethrin, malathion, permethrin, cypermethrin, cyhalothrin, abamectin, tebufenozide, imidacloprid, resmethrin, propargite, fenbutatin-oxide, pyrethrum, and rotenone.

7. The pesticidal composition of claim 5, wherein the plant essential oil compounds are selected from the group consisting of aldehyde C16 (pure),  $\alpha$ -terpineol,

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1- or 2-phenylethyl propionate, piperonal, piperonyl acetate, piperonyl alcohol, D-pulegone, terpinen-4-ol, terpinyl acetate, 4-tert butylcyclohexyl acetate, thyme oil (white and red), thymol, trans-anethole, vanillin, and ethyl vanillin.

12. A method for controlling pests, which comprises applying to the locus where  
5 control is desired a pesticidally-effective amount of the pesticidal composition of claim 1.

13. A method for controlling pests, which comprises applying to a locus where control is desired a pesticidally-effective amount of the pesticidal composition of claim 3.

14. A method for controlling pests, which comprises applying to the locus where control is desired a pesticidally-effective amount of the pesticidal composition of claim 5.

10            15. A method for controlling pests, which comprises applying to the locus where control is desired a pesticidally-effective amount of the composition of claim 8.

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